

Applicant : Clyde Fraisse, et al.
Serial No. : 10/083,681
Filed : February 26, 2002
Page : 2 of 10

Attorney's Docket No.: 10436-054001

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method implemented in a computer program to provide a map of site-specific amounts of a soil nutrient to be applied in fertilizer to an agricultural field divided into sites, the method comprising:

calculating for the field, from a map of site-specific field characteristic data for the field, a map for the field of site-specific amounts of the soil nutrient needed to produce at each site a maximum possible crop yield, wherein the field characteristic is a measure of biomass produced by the field in one or more growing seasons; and

subtracting, from the site-specific soil nutrient amounts for maximum yield for the field, site-specific measures of the soil nutrient existing in the field, thereby producing a map of site-specific amounts of the soil nutrient to be applied in fertilizer to the field.

2. (Cancelled)

3. (Currently Amended) The method of claim 21, further comprising:

calculating, from a map of site-specific image data taken of the field during one or more past growing seasons, a map of site-specific measures of a leaf area index, the leaf area index serving as the measure of biomass produced by the field.

4. (Currently Amended) The method of claim 21, further comprising:

calculating, from a map of site-specific image data taken of the field during one or more past growing seasons, a map of site-specific measures of a vegetation index, the vegetation index serving as the measure of biomass produced by the field.

Applicant : Clyde Fraisse, et al.
Serial No. : 10/083,631
Filed : February 26, 2002
Page : 3 of 10

Attorney's Docket No.: 10436-054001

5. (Cancelled)
6. (Original) The method of claim 1, wherein the soil nutrient is nitrogen.
7. (Original) The method of claim 1, wherein the soil nutrient is phosphorous.
8. (Original) The method of claim 1, wherein the soil nutrient is potassium.
9. (Original) The method of claim 1, wherein the soil nutrient is organic fertilizer.
10. (Original) The method of claim 9, wherein the organic fertilizer is manure.
11. (Original) The method of claim 1, wherein the soil nutrient is a micronutrient.
12. (Original) The method of claim 11, wherein the micronutrient is Zn.
13. (Original) The method of claim 11, wherein the micronutrient is Fe.
14. (Original) The method of claim 1, further comprising:
calculating for the field, from a map of site-specific image data taken of the field in a bare soil state, a map of site-specific measures of soil brightness; and
calculating the site-specific measures of the soil nutrient existing in the field from at least the map of site-specific measures of soil brightness.
15. (Original) The method of claim 1, wherein the site-specific measures of the soil nutrient existing in the field are calculated from at least a map of site-specific measure of soil electrical conductivity.
16. (Original) A method implemented in a computer program to provide a map of site-specific amounts of a soil nutrient to be applied in fertilizer to an agricultural field divided into sites, the method comprising:

Applicant : Clyde Fraisse, et al.
Serial No. : 10/083,681
Filed : February 26, 2002
Page : 4 of 10

Attorney's Docket No.: 10436-054001

calculating for the field, from a map of site-specific measures of the biomass of one or more past crops grown in the field, a map for the field of site-specific amounts of the soil nutrient needed to produce at each site a maximum possible crop yield;

calculating for the field, from a map of site-specific image data taken of the field in a bare soil state, a map of site-specific measures of soil brightness;

calculating site-specific measures of the soil nutrient existing in the field from at least the map of site-specific measures of soil brightness;

subtracting, from the site-specific soil nutrient amounts for maximum yield for the field, site-specific measures of the soil nutrient existing in the field, thereby producing a map of site-specific amounts of the soil nutrient to be applied in fertilizer to the field.

17. (Original) The method of claim 16, wherein the soil nutrient is nitrogen.

18. (Original) The method of claim 16, wherein the soil nutrient is phosphorous.

19. (Original) The method of claim 16, wherein the soil nutrient is potassium.

20. (Original) The method of claim 16, wherein the soil nutrient is organic fertilizer.

21. (Original) The method of claim 16, wherein the soil nutrient is a micronutrient.

22. (Currently Amended) A computer program, residing on a computer-readable medium, for providing a map of site-specific amounts of a soil nutrient to be applied in fertilizer to an agricultural field divided into sites, the computer program comprising instructions for causing a computer to:

calculate for the field, from a map of site-specific field characteristic data for the field, a map for the field of site-specific amounts of the soil nutrient needed to produce at each site a maximum possible crop yield, wherein the field characteristic is a measure of biomass produced by the field in one or more growing seasons; and

Applicant : Clyde Fraisse, et al.
Serial No. : 10/083,681
Filed : February 26, 2002
Page : 5 of 10

Attorney's Docket No.: 10436-054001

subtract, from the site-specific soil nutrient amounts for maximum yield for the field, site-specific measures of the soil nutrient existing in the field, thereby producing a map of site-specific amounts of the soil nutrient to be applied in fertilizer to the field.

23. (Cancelled)

24. (Currently Amended) The computer program of claim 2322, wherein the instructions further cause the computer to:

calculate, from a map of site-specific image data taken of the field during one or more past growing seasons, a map of site-specific measures of a leaf area index, the leaf area index serving as the measure of biomass produced by the field.

25. (Currently Amended) The computer program of claim 2322, wherein the instructions further cause the computer to:

calculate, from a map of site-specific image data taken of the field during one or more past growing seasons, a map of site-specific measures of a vegetation index, the vegetation index serving as the measure of biomass produced by the field.

26. (Cancelled)

27. (Original) The computer program of claim 22, wherein the soil nutrient is nitrogen.

28. (Original) The computer program of claim 22, wherein the soil nutrient is phosphorous.

29. (Original) The computer program of claim 22, wherein the soil nutrient is potassium.

30. (Original) The computer program of claim 22, wherein the soil nutrient is organic fertilizer.

31. (Original) The computer program of claim 22, wherein the soil nutrient is a micronutrient.

32. (Original) The computer program of claim 22, wherein the instructions further cause the computer to:

Applicant : Clyde Fraisse, et al.
Serial No. : 10/083,681
Filed : February 26, 2002
Page : 6 of 10

Attorney's Docket No.: 10436-054001

calculate for the field, from a map of site-specific image data taken of the field in a bare soil state, a map of site-specific measures of soil brightness; and

calculate the site-specific measures of the soil nutrient existing in the field from at least the map of site-specific measures of soil brightness.

33. (Original) The computer program of claim 22, wherein the instructions cause the site-specific measures of the soil nutrient existing in the field to be calculated from at least a map of site-specific measure of soil electrical conductivity.